REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 13-16 are pending in the present application. Claims 4-12 have been canceled without prejudice and Claims 13-16 have been added by the present amendment.

In the outstanding Office Action, Claims 10-12 were rejected under 35 U.S.C. §112, second paragraph; Claims 4, 5, and 7 were rejected under 35 U.S.C. §102(a) as unpatentable over Kimura et al. (U.S. Patent 5,843,227, herein "Kimura"); and Claims 6 and 8-12 were rejected under 35 U.S.C. §103(a) as unpatentable over Kimura in view of Sugawara et al. (Japanese Patent Application JP2001-235775, herein "Sugawara").

Applicants note that an Information Disclosure Statement (IDS) filed on September 27, 2004 was only partially acknowledged by the outstanding Office Action. It is believed that reference AA was not initialed as acknowledged in error. Applicants respectfully request that the next Office communication initials all references filed with the IDS on September 27, 2004.

In view of the outstanding rejections of the claims on the merits, Claims 4-12 have been canceled and new Claims 13-16 are presented. New Claims 13-16 recite the features of pending Claims 4-12 but are written to better comply with the specification. No new matter has been added. The applied art is discussed next with regard to new Claims 13-16.

Briefly recapitulating, new Claim 13 is directed to a solid-state laser that includes a (110)-cut crystal rod belonging to an equi-axis crystal system. The crystal rod has a radius r_0, the laser is operable to cause a beam of radius r_a to propagate through the rod, and $r_a < r_0$.

The solid-state laser of Claim 14 advantageously reduces a depolarization by more than one order of magnitude without compensation, compared to that obtained when using a (111)-cut medium, by selecting the beam propagation direction to be different than those of

the (111)-axis directions of a crystal belonging to equi-axis crystal system, as disclosed for example in the specification at page 4, first three full paragraphs.

Turning to the applied art, Kimura discloses a crystal growth method for growing a GaN film with a flat surface on a GaAs substrate. Kimura discloses a crystal growth method in which the GaAs substrate has a surface which is inclined with respect to the GaAs (100) face, the inclination angle being larger than 0 degree but smaller than 35 degrees with respect to the GaAs(100) face. The inclination direction of the substrate surface is within a range of an angular range from the [0,0,1] direction of GaAs to the [0,-1,0] direction past the [0,-1,1] direction and angles less than 5 degrees on opposite sides of the angular range around an [1, 0, 0] direction of GaAs taken as an axis.

However, Kimura does not teach or suggest a (110)-cut crystal rod belonging to an equi-axis crystal system, as required by independent Claim 13.

Therefore, Applicants respectfully submit that independent Claim 13 and each of the claims depending therefrom patentably distinguish over Kimura.

Sugawara discloses an anisotropic optical crystal, which is different from the claimed crystal that belongs to equi-axis crystal system that is capable of maintaining the depolarization characteristics of the propagating beam in all directions. Thus, the advantages of the claimed solid-state laser cannot be acheived by the device of Sugawara.

In addition, Sugawara does not teach or suggest a (110)-cut crystal rod belonging to an equi-axis crystal system, as required by independent Claim 13.

Thus, at least for the above discussed reasons, Applicants respectfully submit that independent Claim 13 and each of the claims depending therefrom patentably distinguish over Kimura and Sugawara, either alone or in combination.

Further, the device of Sugawara relates to a wavelength conversion device composed of single-crystal lithium tetraborate ($Li_2B_4O_7$). This single-crystal lithium tetraborate must

have a noncentrosymmetric crystalline structure in order to wave-convert, and thus, has an optically anisotropic crystalline structure. In other words, even if the (110) direction of the single-crystal lithium tetraborate in Sugawara is selected, it will not achieve the advantages of the device of independent Claim 13.

Furthermore, the device of Sugawara includes a single-crystal lithium tetraborate which is suitable for wavelength conversion by non-critical phase matching (NCPM) and has a large angular bandwidth. By contrast, the device of Sugawara is not suitable for reducing a depolarization by more than one order of magnitude without compensation, compared to that obtained when using a (111)-cut medium, by selecting the beam propagation direction to be different from those of the (111)-axis directions of a crystal belonging to equi-axis crystal system as in Claim 13.

In addition, even if one of ordinary skill in the art would combine the teachings of Kimura (a method for growing a GaN film on a GaAs substrate) with the teachings of Sugawara (a wavelength conversion device using a (110) direction of single-crystal lithium tetraborate having noncentrosymmetric crystalline structure), it is respectfully submitted that the two crystals are incompatible and also there is no motivation or suggestion of why to combine the teachings of the two references.

Thus, Applicants respectfully submit that independent Claim 13 and each of the claims depending therefrom patentably distinguish over Kimura and Sugawara, either alone or in combination.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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